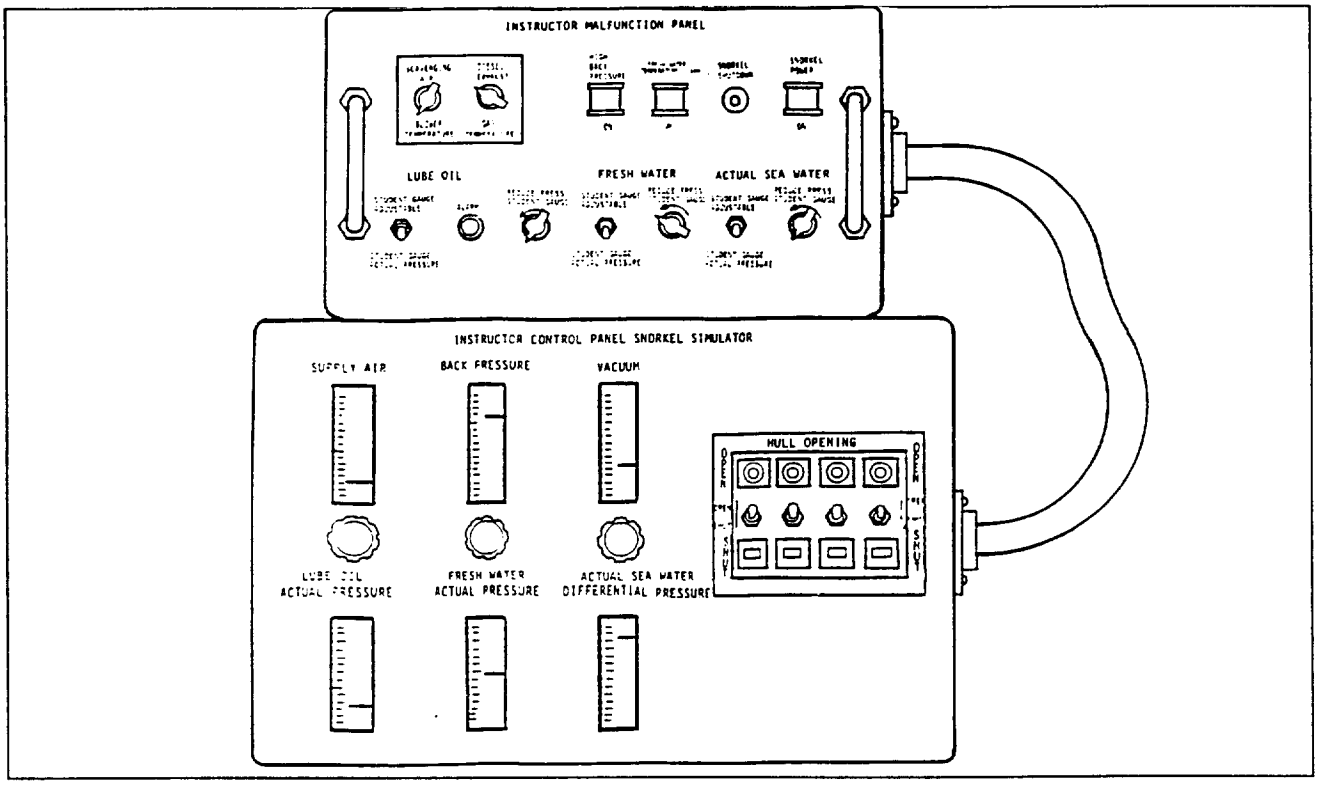
DIRECTORY OF NAVAL TRAINING DEVICES



SUBMARINE DIESEL ENGINE SNORKEL TRAINER, DEVICE 21H11

TRAINING CATEGORY:

UNDERSEA OPERATIONS (Misc)

ORIGINATING AGENCY:

CNET

SECURITY CLASSIFICATION:

Device 21H11 is unclassified.

INTENDED USE:

Device 21H11 simulates diesel engine operating parameters encountered during submerged submarine snorkeling operations. The simulated parameters are instructor controlled so that simulated malfunctions can be demonstrated to the diesel engine student.

FUNCTIONAL DESCRIPTION:

The trainer consists of an instructor control panel, a snorkel control and hull opening panel, diesel and snorkel exhaust safety circuit, low lube oil alarm, high blower differential pressure alarm, and communication system.

The device inserts abnormal operating conditions into three (3) electrical systems which protect the diesel engine by automatic shutdown or by warning of faulty operation.

The instructor control panel is installed on the side of diesel operator catwalk stand near engine governor. The GFE diesel engine gageboard is in the view of instructor while operating control panel. The snorkel control and hull opening panel is mounted near the gageboard so the student can view the panel and gageboard at same time.

The communication system consists of a network of sound-powered telephone headsets.

The instructor is able to simulate abnormal conditions in the following parameters:

a. High Scavenging Air Pressure (high back pressure). Gage on instructor panel to monitor simulated pressure.

b. High Atmospheric Pressure Shutdown. Gage on instructor panel to monitor simulated vacuum.

c. Scavenging Air Blower High Temperature. An alarm is sounded when the blower differential temperature exceeds a predetermined valve.

d. Lube Oil Low Pressure. An alarm bell and horn is activated when simulated pressure exceeds a certain valve. The simulated pressure is displayed on engine gageboard and actual pressure is indicated on gage on Instructors panel.

e. Low Sea Water Differential Pressure. The simulated pressure is displayed on gageboard. Instructor has a gage indicating actual pressure.

f. Fresh Water Temperature. Instructor controlled simulated temperature operates an alarm circuit.

g. Diesel Exhaust Gas Temperature. An instructor control simulates temperature on a single cylinder. Actual or simulated temperature for cylinder three (3) is displayed on the pyrometer indicating system.

h. Low Fresh Water Discharge Pressure. Simulated pressure allows instructor to shut down diesel by low engine RPM Cutout.

INSTALLATION AREA:

Trainers are used to control GFE (Government Furnished Equipment) Diesel Engines which are presently installed at various locations.

POWER REQUIREMENTS:

115V, Single Phase, 60 Hz.,
100 psig Air Supply

CONTRACT IDENTIFICATION:

Naval Training Systems Center, Orlando, FL, Task 6231

LOCAL STOCK NUMBER:

6910-LL-C00-4555